

**Department of Mathematics and Computer Science  
Adelphi University  
Fall 2017**

<b>0145-271-001</b>	<b>Software I: Utilities and Internals</b> Dr. R. M. Siegfried 407 Science (516)877-4482 <a href="http://home.adelphi.edu/~siegfried/cs271">http://home.adelphi.edu/~siegfried/cs271</a> <a href="mailto:siegfried@adelphi.edu">siegfried@adelphi.edu</a> ( <b><i>not for homework submission</i></b> )
<b>Office Hours</b>	Tu 10AM-12Noon; W 11:00-11:50AM; F1-2PM
<b>Course Description and Purpose</b>	Develop facility using standard Unix facilities, including command language, filters, editors, scripting languages (e.g. sh, sed, awk), compilers, linkers, make and version-control utilities. Understand how to retrieve command arguments, run other programs, and perform I/O and inter-process communication in the C programming language.
<b>Gen Ed Learning Goals and Distribution Requirements</b>	None
<b>Course Learning Goals</b>	Students will be able to use basic UNIX commands and text editors, to write shell scripts, and to use UNIX filters, such as sed and grep, to write programs in the Python programming language, identify the main components of the Linux operating system and to use basic Linux system calls in programs.
<b>Prerequisite Corequisite</b>	CSC 172 CSC 270
<b>Text</b>	<b>The Linux Command Line: A Complete Introduction</b> , 1 <sup>st</sup> ed., by William E. Shotts, Jr., No Starch Press, 2012.
<b>Topics</b>	UNIX/Linux for Beginners The vi Text Editor File System Commands Regular Expressions, <b>grep</b> and <b>sed</b> Filters The Interactive Bash Shell Programming the Bash Shell Programming in Perl UNIX/Linux and Processes UNIX/Linux System Calls Error Handling in C Files in UNIX/Linux

## Assignments

The assignments this semester will require students to use UNIX commands and print their sessions, design, code, debug and submit programs written in C, C++ and Perl using the vi editor; design, code, debug and submit shell scripts, many of which will use UNIX filters. This will require access to the University Linux system, Panther, and this will require students to install PuTTY, a secure terminal emulator on their personal computers if they wish to complete assignments off campus.

While there will be opportunities to use class time for assigned work, this will be mainly limited to debugging and other assistance that students require in class. One should expect to spend 4-6 hours outside class working on programming assignments for this class.

Students are expected to turn in assignments in hardcopy; if you wish, you may submit it through Moodle. **NO ASSIGNMENTS WILL BE ACCEPTED BY E-MAIL.**

## Grading

Each programming assignment will be graded with a base grade of 90%, with points added to reflected areas in which the assignment exceeded specified requirements and/or points deducted to show areas where the assignment is deficient.

Late penalties may be assessed of 2 points per class after the due date.

The final average will be weighted (based on the following ratio:

Programming Assignments	30%
In-Class Exams	35%
Final Exam	35%

The final average will translate to a letter grade according to the following table:

Final Average	Course Grade
A	90 – 100
A-	87.5 – 89.9
B+	83.3 – 87.4
B	80.0 – 83.2
B-	77.5 – 79.9

C+	73.3 – 77.4
C	70.0 – 73.2
C-	67.5 – 69.9
D+	63.3 – 67.4
D	60.0 – 63.2
F	0.0 – 59.9

## Attendance

The following is the Adelphi University General Attendance Policy:

*Only students who are registered for courses, and whose name appears on the Official Class Roster may attend courses at the University. Adelphi students make a commitment to be active participants in their educational program; class attendance is an integral part of this commitment. Attendance requirements for each course will be announced by the faculty member at the beginning of each term. Students are expected to be present promptly at the beginning of each class period, unless prevented by illness or by other compelling cause. In the event of such absence, students may request that faculty members be notified by the Office of Academic Services and Retention. Students are responsible for completing course work missed through absences. Students should wait a reasonable length of time for an instructor in the event that the instructor is delayed.*

Additionally, you are also responsible for whatever work is covered in class whether or not you are there. Absence from the final exam will be excused only for a good and well-documented reason. The decision to allow a make-up exam will be made in accordance with the policies of Adelphi University.

NB:

The class will NOT meet on Friday, September 22. We will make up this class by meeting on Tuesday December 5.

Additionally, Friday, October 6 and Friday, October 13 will be lab days. Attendance will be taken and you will have the opportunity to submit assignments that are due.

If the University is closed for more than two days due to an emergency, go the home page for this course site each day for instructions and assignments. Student instructions materials can be found at  
<http://home.adelphi.edu/~siegfried/cs271>

Tentative Schedule (**Subject to Change**)

<u>Date</u>	<u>Topic</u>	<u>Assignment due</u>
August 28	UNIX for Beginners	
August 30	UNIX for Beginners	Assn #1 – Working with Panther
September 1	UNIX for Beginners	Assn #2 – Working with files on Panther
September 6	The vi Text Editor	Assn #3 – Some new File Utilities on Panther
September 8	The vi Text Editor	
September 11	File System Commands	Assn #4 - Starting to work in vi
September 13	File System Commands	Assn #5 – Writing a C program using vi
September 15	File System Commands	
September 18	Regular Expressions, grep and sed	Assn #6 – Using Basic File Commands
September 20	Regular Expressions, grep and sed	
September 22	<b><u>No class – to be made up on December 5</u></b>	
September 25	Filters	Assn #7 – Using grep and sed to alter a file
September 27	Filters	
September 29	Using the shell	
October 2	Using the shell	Assn #8 – Using filters
October 4	Using the shell	
October 6	Lab	
October 11	Shell Programming using bash	Assn 9 – Working with bash
October 13	Lab	
October 16	Review for Midterm Exam	
October 18	Midterm Exam	
October 20	Shell Programming using bash	
October 23	Shell Programming using bash	
October 25	What are Processes?	Assn 10 – Programming in bash
October 27	What are Processes?	
October 30	What are Processes?	
November 1	Introduction to Operating Systems	Assn 11 – Analyzing Scheduling Algorithms
November 3	Introduction to Operating Systems	
November 6	Introduction to Operating Systems	
November 8	Processes and Programming	
November 10	Processes and Programming	
November 13	Processes and Programming	
November 15	File Systems	

November 17	File Systems	Assn #12 – Creating Concurrent Processes
November 20	File Systems	
November 27	An Introduction to File I/O in Linux	
November 29	An Introduction to File I/O in Linux	
December 4	An Introduction to File I/O in Linux	
December 5	Basics of Python Programming	
December 6	Basics of Python Programming	Assn #13 – Using system call to read and file files
December 8	Basics of Python Programming	
December 11	Review for Final Exam	Assn #14 – Programming in Python
TBA	Final Exam	

**Students With Disabilities**

If you have a disability that may significantly impact your ability to carry out assigned coursework, please contact the Student Access Office (SAO) at 516-877-3806 or send an email to [sao@adelphi.edu](mailto:sao@adelphi.edu). The staff will review your concerns and determine, with you, appropriate and necessary accommodations. Please allow for a reasonable time frame for requesting ASL Interpreters or Transcription Services.

**Honor Code**

Students enrolled in this course are expected to abide by the Adelphi University Honor Code. The purpose of the Honor Code is to protect the academic integrity of the University by encouraging consistent ethical behavior in assigned coursework by students. Following is excerpted from the Student Honor Code:

**The code of academic honesty** prohibits behavior, which can broadly be described as lying, cheating, or stealing. Violations of the code of academic honesty will include, but are not limited to, the following:

1. Fabricating data or citations
2. Collaborating in areas prohibited by the professor
3. Unauthorized multiple submission of work
4. Sabotage of others' work, including library vandalism or manipulation
5. Plagiarism: presenting any work as one's own that is not one's own
6. The creation of unfair advantage
7. The facilitation of dishonesty
8. Tampering with or falsifying records
9. Cheating on examinations through the use of written materials or giving or receiving help in any form during the exam, including talking, signals, electronic devices, etc.

**Student Course Evaluations**

During the last two weeks of the class, you will receive notification, via mail and eCampus, that the course evaluation is available for your input electronically. Availability will end at the start of the final examination period. Your feedback is valuable and I encourage you to respond. Please be assured that your responses are anonymous and the results will not be available to the instructor until after the end of the semester and therefore after course grades have been submitted.

Tear off this and return with information required below:

**STUDENT ACKNOWLEDGEMENT:**

I HAVE RECEIVED AND READ THE SYLLABUS FOR  
[INSERT COURSE NUMBER AND SECTION].

SIGNED: \_\_\_\_\_

PRINT NAME:

\_\_\_\_\_

DATE: \_\_\_\_\_

Warning – This page must be signed and returned to the instructor to receive a complete grade in this course.